

**Notice of Allowability**

Application No.

10/081,146

Applicant(s)

CRANE ET AL.

Examiner

David A. Zarneke

Art Unit

2827

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 5-25.
3. ☒ The drawings filed on 25 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_.
  - (b) ☐ including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the Examiner.
  - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                             | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)          |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____             |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____               | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment                  |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
|  | 9 <input type="checkbox"/> Other _____  |

### EXAMINER'S AMENDMENT

Claims 5-25 have been allowed over the prior art.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Zele on June 27, 2003.

The application has been amended as follows:

1) Cancel claims 1-4 and 26-46 without prejudice or disclaimer.

2) Amend claims 5, 6 and 9-14 by replacing "1" with --7--.

3) Replace claim 7 with the following:

--A semiconductor die package comprising:

a polymer base comprising a lower surface and an upper surface, the upper surface for mounting at least one semiconductor die;

a polymer cap operatively secured over at least a portion of the upper surface of the base forming a cavity, the cap having a light transmissive member operatively positioned to allow light of predetermined wavelengths to pass between at least a portion of the upper surface of the base and the light transmissive member;

a plurality of conductive leads extending through the base from the lower surface of the base to the cavity; and

a leg extension having a plurality of conductive legs, the leg extension being mounted on the lower surface of the polymer base, wherein at least one of the plurality of conductive legs are in electrical communication with at least one of the plurality of conductive leads extending through the base.—

4) Amend claims 15, 16 and 19-25 by replacing “2” with –17--.

5) Replace claim 17 with the following:

--A matrix of semiconductor die packages comprising:

a base matrix comprising a plurality of polymer bases, each base comprising a surface for mounting at least one semiconductor die;

a cap matrix comprising a plurality of polymer caps operatively secured over the base matrix, each base and cap combination forming a cavity, each cap having a light transmissive member operatively positioned to allow light of predetermined wavelengths to pass between the surface for mounting at least one semiconductor die of a corresponding base and the light transmissive member;

a plurality of conductive leads extending through each base from an outside surface of each base to the corresponding cavity formed by each cap and base combination; and

a leg extension matrix, each leg extension in the leg extension matrix having a plurality of conductive legs, the leg extension matrix being mounted on the lower surface of the base matrix, wherein at least one of the plurality of conductive legs of each leg extension are in electrical communication with at least one of the plurality of conductive leads of the corresponding base.--

The following is an examiner's statement of reasons for allowance: Prior art could not be located that taught forming a die package wherein conductive leads extend through a polymer base having a polymer cap with a light transmissive window, and a leg extension having conductive legs mounted on the base, wherein the legs are in electrical communication with the leads extending through the base.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kiely et al., US Patent 5,953,355, teaches a laser package comprising a polymer base (12), a polymer cap (16) having a light transmissive window (50), and conductive leads (26, 28 & 30) extending through and out the other side of the base. Kiely does not teach the leads as extending from the lower surface of the base to the upper

surface. Kiely also fails to teach attachment of a leg extension having legs in electrical communication with the leads.

Ito et al., US Patent 5,323,025, teaches a pyroelectric IR sensor having a separate leg extension unit (9) having a plurality of legs (8), but the legs do not attach to leads extending through the base (5). The legs (8) themselves pass through the base to be electrically connected to the chip on the opposite side of the base (figures).

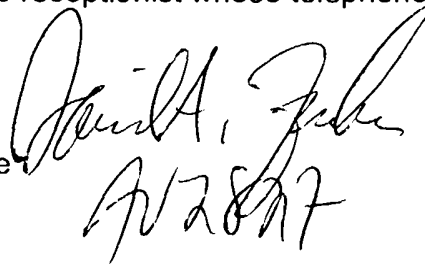
Barnett et al., US Patent 6,541,800, teaches a base (14) having a post (60) and a leads (12) to which a die (16) is attached, wherein the post (60) is received by extension (57). The extension (57) function as an electrical connection, it functions as a non-electrical mounting device (5, 12+).

Any inquiry concerning this communication should be directed to David A. Zarneke at (703)-305-3926. The examiner can be reached on M-F 10AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (703)-305-9883. The fax phone numbers for the organization where this application is assigned are (703)-308-7722 for regular communications and (703)-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703)-308-0956.

David A. Zarneke  
June 27, 2003



7/28/07